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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
AMRANY, ADI	

ART UNIT	PAPER NUMBER
2836	

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12/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/788,962	LASALANDRA ET AL.	
	Examiner	Art Unit	
	Adi Amrany	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 9-10, 13-14, 18 and 21-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Jeenicke (US 5,737,224).

With respect to claims 1 and 9, Jeenicke discloses a portable (vehicle) multidirectional inertial device (fig 3; col. 2, line 65 to col. 3, line 25) having a plurality of preferential detection axes (10, 12; col. 2, lines 4-15), comprising: inertial sensor means (10, 12); transduction means (integrators to produce ax, ay); first comparison means (14; col. 2, lines 16-23); and second comparison means (14, 16; col. 2, lines 24-43). Jeenicke discloses that each of the fig 3 channels comprise the evaluators (14, 16) of fig 1 (col. 3, lines 2-4). Thus, Jeenicke discloses that both the longitudinal (10) and transverse (12) acceleration signals are each singly compared against a high threshold and compared together against a lower threshold.

With respect to claims 2-3, Jeenicke discloses each comparison means comprises a comparator ("determines that the acceleration is greater than a predetermined threshold") and at least one logic gate (18').

With respect to claim 4, Jeenicke discloses that the upper thresholds are equal to each other and the lower thresholds are equal to each other (col. 3, lines 2-6). Jeenicke

discloses that the channels are designed as a backup system, and so it is inherent that the thresholds are the same for both channels.

With respect to claims 10-11, Jeenicke discloses the apparatus necessary to complete the recite method, as discussed above in the rejection of claims 1 and 4, respectively.

With respect to claim 13, Jeenicke discloses a device comprising an acceleration circuit (10, 12); a comparator circuit (item 14); and a logic circuit (14), as discussed above in the rejection of claim 1.

With respect to claim 14, Jeenicke discloses a sensor in each detection axes (10, 12); and a transduction circuit (integrator to produce ax, ay) for each axes to produce the dynamic acceleration signal.

With respect to claim 18, Jeenicke discloses two detection axes (10, 12).

With respect to claim 21, Jeenicke discloses the apparatus necessary to complete the recite method, as discussed above in the rejection of claim 13.

With respect to claims 22-24, Jeenicke further discloses the detection axes are at right angles (orthogonal and perpendicular) to each other (longitudinal and transverse).

With respect to claims 25-29, Jeenicke discloses that in forward impacts, the absolute values of the acceleration signals are compared to upper and lower thresholds (col. 2, lines 16-43).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 5, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeenicke.

With respect to claims 5 and 12, Jeenicke does not expressly disclose the ratio between the upper and lower thresholds. At the time of the invention by applicants, it would have been obvious to set the ratio to $1/\sqrt{2}$, since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617, F.2d. 272, 205 USPQ 215 (CCPA 1980).

With respect to claim 17, Jeenicke discloses two transduction circuits (integrators within sensors 10, 12). At the time of the invention by applicants, it would have been obvious to combine the transduction circuits into one circuit that sequentially outputs the acceleration signals, since it has been held that forming in one piece an article which has formerly been in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

5. Claims 6-7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeenicke in view of Oguchi (US 2002/0033047).

Jeenicke discloses an inertial sensor means for each of said preferential detection axes, does not expressly disclose said inertial sensor means comprise at least one micro-electro-mechanical sensor with capacitive unbalancing. Oguchi discloses an acceleration sensor comprising a micro-electromechanical sensor with capacitive unbalancing (fig 2; par 41-42).

Jeenicke and Oguchi are analogous because they are from the same field of endeavor, namely acceleration force sensors. At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to combine the multidirectional inertial device disclosed in Jeenicke with the micro-electromechanical sensor with capacitive unbalancing disclosed in Oguchi, in order to use a force sensor with a moveable portion that naturally returns to its original position and can continually operate without constant recalibration.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeenicke in view of Oguchi and Woehrl (US 5,173,614)

Woehrl discloses a multidirectional inertial device having a plurality of preferential detection axes (abstract; col. 4, lines 52-67) comprising a transduction means (fig 2a; col. 5, lines 6-50) that comprises a current to voltage converter (fig 2a, item 2), a filter (item 8); and a rectifier (items 9-12). The Woehrl sensor outputs a voltage signal to the filter. It would be obvious to one skilled in the art to include a I/V converter (a resistor) in a system that uses a inertial sensor means that outputs a current signal in order to convert the signal acceptable to input into the filter. Further, the subtractor node would be obvious to one skilled in the art since the output of the Woehrl filter is equivalent to subtracting the output of an oppositely biased filter (low-pass vs. high pass) from the original signal.

Jeenicke, Oguchi and Woehrl are analogous because they are from the same field of endeavor, namely acceleration force sensors. At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to combine

the multidirectional inertial device disclosed in Jeenicke and Oguchi with the transduction means components disclosed in Woehrl in order to smooth the sensor output and ready the signal for threshold comparison (Woehrl col. 2, lines 62-68)

7. Claims 15 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeenicke, in view of Ishiyama (US 6,738,214).

With respect to claim 15, Jeenicke does not expressly disclose each of the transduction circuits is configured to subtract, from the respective acceleration value, a respective static acceleration value, thereby producing the respective dynamic acceleration signal.

Ishiyama discloses a device comprising an acceleration circuit configured to produce a dynamic acceleration signal corresponding to a level of acceleration on each of a plurality of detection axes comprising both high-pass and a low-pass filters. Ishiyama utilizes the high-pass filter to extract the dynamic acceleration components (falling), while the low-pass filter is used to extract the static acceleration components (gravity) (col. 5, lines 5-31). Ishiyama discloses utilizing a high-pass filter to extract the dynamic acceleration signal (col. 5, lines 5-31). As discussed in the rejection of claim 8, it would have been obvious that a high-pass filter output is equivalent to subtracting a low-pass filter output from the original signal.

Jeenicke and Ishiyama are analogous because they are from the same field of endeavor, namely acceleration detection circuits. At the time of the invention by applicants it would have been obvious to combine the device disclosed in Jeenicke with

the filters disclosed in Ishiyama in order to differential between static and dynamic accelerations (Ishiyama, abstract).

With respect to claims 19-20, Ishiyama discloses the device further comprises a portable computer (col. 3, line 11 to col. 4, line 6). The Ishiyama acceleration sensor detects when the device is falling and shuts off sensitive internal components. Further, it would have been obvious to a person of ordinary skill in the art that to combine the device with a cell phone. The motivation for doing so would have been because a cell phone is small portable electronic device that may be dropped and is subjected to internal component damage, similar to a portable computer.

8. Claims 1, 9, 10, 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiribayashi (US 5,995,892).

Kiribayashi discloses a portable multidirectional inertial device (fig 10; col. 12, line 40 to col. 16, line 39) having a plurality of preferential detection axes (figs 24-25), comprising inertial sensor means (fig 10; items 11, 21; col. 6, lines 11-53); transduction means (output from 11, 21); first comparison means (items 13, 23; col. 6, line 54 to col. 7, line 22) and second comparison means (items 14-15, 24-25).

Kiribayashi discloses the first comparison means outputs a logic value when only one of the acceleration signals is greater than a first threshold (V1, V3; col. 13, lines 31-40) and the second comparison outputs a logic signal when both signals are greater than a second threshold (V2, V4). Kiribayashi, however, discloses that the second threshold is greater than the first threshold (col. 12, lines 57-60). At the time of the invention by applicants, it would have been obvious to one skilled in the art to rearrange

the threshold values such that the V2 and V4 and lower than V1 and V3, since discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch* at 272.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See also: Laaser (US 6,032,092) and Iyoda (US 5,961,562).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on Mon-Thurs, from 10am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

12/5/09

MICHAEL SHERRY
SUPERVISORY PATENT EXAMINER